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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/087,541

03/01/2002

Benjamin R. Halpern

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05/26/2006

MILA KASAN, PATENT DEPT.
APPLIED BIOSYSTEMS
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FOSTER CITY, CA 94404

EXAMINER

BORIN, MICHAEL L

ART UNIT

PAPER NUMBER

1631

DATE MAILED: 05/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/087,541

Applicant(s)

HALPERN, BENJAMIN R.

Examiner

Michael Borin

Art Unit

1631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2006.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15, 17, 19 is/are pending in the application.
4a) Of the above claim(s) 1-7 and 11 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 8-10, 12-15 and 17-19 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. Amendment filed 03/15/2006 is acknowledged.

Claims 16, 18 are canceled. Claims 1-15, 17,19 are pending. Claims 1-7, 11 remain withdrawn from further consideration as being drawn to a non-elected groups. Claims 8-10,12-15,17-19 are under consideration.

Rejections not reiterated from previous Office action are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied.

Claim Rejections - 35 USC § 112, second paragraph.

2. Claims 8-10, 12-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The rejection is necessitated by amendment and is applied for the following reasons:

A. Claim 8, step "apportioning: the step addresses " apportioning into a plurality of divisions representative of mass interval of spectral range". It is not clear what divisions are "representative of mass interval of spectral range". Further, it is not clear what constitutes "plurality" of divisions.

B. Claim 8, step "evaluating". The term "evaluating" is vague and indefinite, and there is no definition of the term in specification. It is not clear what method step is involved in "evaluating".

Claim Rejections - 35 USC § 112, first paragraph.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 30, 34, 38 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. The rejection is necessitated by amendment and is applied for following reasons:

A. Claim 8 introduces new matter as they use the phrase "apportioning into a plurality of divisions representative of mass interval of spectral range". Specification does describe dividing the range into m equal interval; this however is not equivalent to now claimed divisions which are representative of some "mass intervals" of the spectral range.

B. Further claim 8 introduces new matter as it addresses a step of "evaluating" which is not addressed in specification.

Claim Rejections - 35 USC § 103.

In response to rejection of claims 8-10,12-19 as rejected under 35 U.S.C. 102(b), applicant argues that the prior art cited in the rejection does not teach dividing spectral

range into separate intervals and performing search within each of the intervals; the claims are amended to recite the step of apportioning the spectral range into plurality of divisions. Consequently the art rejection of record is modified as follows.

4. Claims 8-10,12-19 are rejected under 35 U.S.C. 102(b) as anticipated by Wilkins et al or Eriksson et al in view of Arnold et al.

The instant claims are drawn to method for comparing a modified query peptide to a plurality of database peptides. "Modified" means polypeptide modified by any post-translational modification, such as phosphorylation, oxidation, substitution, etc, which alters mass of the query polypeptide. The claimed method comprises the steps of: (a) identifying a fragmentation spectrum comprising a plurality of query mass values for query peptide; (b) dividing spectral range of the modified peptide into intervals, c) evaluating peptide fragments in each interval, and comparing fragments in each of said plurality of intervals with known fragments, scoring the fragments and identifying best matching fragments. A spectral range is the range from zero to the unmodified query peptide's mass.

The references of Wilkins et al and Eriksson et al are applied as discussed in the art rejection of record (paragraph #5 of Office action mailed 09/12/2005. The references do not teach apportioning the spectral range into plurality of divisions.

Arnold et al teaches that matching of results of mass spectrometry with databases can be substantially improved by dividing spectral range into intervals. The reference teaches that dividing spectral range into intervals allows fine-tuning of correlation analysis and yields correlation indices that are more sensitive to spectral differences. See abstract, and p. 635. For example mass range from 3.5 to 10 kDa

was divided into 13 intervals of 500 Da each before running comparative analysis. See p. 631, left column, bottom.

It would be *prima facie* obvious to one skilled in the art at the time the invention was made to be motivated to divide spectral range into plurality of divisions while using methods of Wilkins et al or Eriksson et al because such subdivision into intervals was shown by Arnold to be beneficial for more precise detection and determination of spectral differences which is a desirable feature for spectral analysis of modified peptides in the methods of Wilkins et al and Eriksson et al .

Double Patenting

5. Claim 8-10,12-19 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims of copending Application No. 10/241751. The rejection is maintained for the reasons of record.

It is noted that Applicant will consider filing Terminal Disclaimer upon identification of allowable subject matter in the instant application. In turn, Examiner will revise the issue of double patenting upon identification of allowable subject matter in the instant application.

Conclusion.

6. No claims are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Borin whose telephone number is (571) 272-0713. The examiner can normally be reached on 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Wang can be reached on (571) 272-0811. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1631

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael Borin, Ph.D.
Primary Examiner
Art Unit 1631

mlb